pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0101931**
Facility Type	**Municipal**	APS ID	**995305**
Major / Minor	**Minor**	Authorization ID	**1276861**

Applicant and Facility Information

Applicant Name	**Jenks Township Forest County**	Facility Name	**Marienville STP**
Applicant Address	PO Box 436 135 Pine Street	Facility Address	Loleta Road
	Marienville, PA 16239-0436		Marienville, PA 16239
Applicant Contact	Gregory Geyer	Facility Contact	Scott Dittman
Applicant Phone	(814) 927-2233	Facility Phone	(814) 927-8903
Applicant E-Mail	geyergd@gmail.com	Facility E-Mail	wwtpjenks@aol.com
Client ID	162203	Site ID	271071
Municipality	Jenks Township	County	Forest
Ch 94 Load Status	Not Overloaded	Connection Status	No Limitations
SIC Code	4952	SIC Description	Sewage conveyance and treatment
Application Received	May 31, 2019	EPA Waived?	Yes
Application Accepted	June 20, 2019	If No, Reason	

Purpose of Application: NPDES permit renewal

Summary of Review

In compliance with no additional WMS violations as of February 24, 2011. *(There are no open violations in WMS for the subject Client ID (162203) as of October 30, 2020)* -JCD

Disinfection is chlorination with de-chlorination. Removal of the discharge chlorine demand from the TRC spreadsheet has lowered the recommended water quality based TRC limit from, 0.25 to 0.1-mg/L. The plant operator reports that seasonal de-chlorination is practiced and the new limits are achievable with year round de-chlorination.

The township secretary/treasurer e-mail is jenkstwp@csonline.net.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		William H. Mentzer William H. Mentzer, P.E. Environmental Engineering Specialist	October 20, 2020
X		Justin C. Dickey Justin C. Dickey, P.E. Environmental Engineer Manager	December 31, 2020

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0.583
Latitude NHD	41º 27' 25.28"	Longitude NHD	-79º 7' 10.83"
Latitude DP	41º 27' 25.37"	Longitude DP	-79º 7' 10.84"
Quad Name	Marienville East	Quad Code	0713
Wastewater:	Treated municipal sanitary sewage		

Receiving Waters	West Branch Millstone Creek	Stream Code	49939
NHD Com ID	102666033	RMI	8.48
Drainage Area	11.38	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	1.138	Q_{7-10} Basis	default
Elevation (ft)	1628.95	Slope (ft/ft)	0.434
Watershed No.	17-B	Chapter 93 Class.	HQ-CWF
Existing Use	**statewide**	Existing Use Qualifier	none
Exceptions to Use	none	Exceptions to Criteria	none
Comments	West Branch mouth elevation 1238.19 feet, drainage 24.4-square miles		

Assessment Status	Attaining Use(s)
Cause(s) of Impairment	
Source(s) of Impairment	
TMDL Status	Name

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Clarion District Pa Am		
PWS Waters	Clarion River	Flow at Intake (cfs)	
PWS RMI	33.47	Distance from Outfall (mi)	40.34

Changes Since Last Permit Issuance: none

Other Comments: Due to the high-quality cold-water fishery designation the evaluated intake is at the discharge.

Treatment Facility Summary

Treatment Facility Name: Marienville STP

WQM Permit No.	Issuance Date
2703403	11/21/14
2704401	11/28/12
2710401	8/30/10
2792401	5/1/08
2706401	6/9/06
2792401	1/30/2006
2792401	4/22/92

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Sequencing Batch Reactor	Chlorine With Dechlorination	0.583

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.583	1799	Not Overloaded	Aerobic Digestion	Landfill

The various permits largely deal with regional sewage facility consolidation as originally several independent facilities were proposed that were later merged reducing the number of discharges.

90.68-dry tons sludge were produced in the current operating year and landfilled.

Mon	Year	Flow Ave	Mass Ave	Max	Min	Ave	Max	#	Min	Ave	Max	#
Annual Average Design Flow			**0.583**									
Hydraulic Design Capacity		**0.583**										
Organic Design Capacity			**1757**									
Annual Average	**2016**	**0.391**										
	2017	**0.443**										
	2018	**0.501**										
Highest Monthly Average Feb	**2018**	**0.568**										
pH				**6.49**			**8.79**	**1460**	**6.37**		**7.27**	**1456**
BOD5			**731**	**1740**		**198**	**463**	**104**				
CBOD5										**< 3.04**	**7.08**	**727**
TSS			**801**	**2365**		**218**	**685**	**104**		**< 5**	**16**	**103**
N			**92.5**	**92.5**		**26.1**	**26.1**	**1**		**5.65**	**18.6**	**103**
P			**5.02**	**8.79**		**20.93**	**272**	**104**		**3**	**7.3**	**103**
Amm			**99**	**99**		**28**	**28**	**1**		**0.57**	**6.28**	**103**
TDS			**1425**	**1425**		**402**	**402**	**1**		**425**	**425**	**1**
T										**17.5**	**24.9**	**728**
TKN										**< 2.9**	**14**	**51**
Nitrite-Nitrate										**< 3.26**	**6.34**	**51**
Chloride										**170**	**170**	**1**
Bromide										**<0.2**	**<0.2**	**1**
Sulfate										**30.7**	**30.7**	**1**
Oil & Grease										**<5**	**<5**	**1**

TDS is less than the water supply criteria.

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That werCompliance History

DMR Data for Outfall 002 (from September 1, 2019 to August 31, 2020)

Parameter	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19
Flow (MGD) Ave Mon	0.349	0.383	0.414	0.493	0.481	**0.560**	0.480	0.435	**0.428**	0.372	0.359	0.301
Flow (MGD) D Max	0.424	0.441	0.464	0.700	0.651	**1.019**	0.797	0.838	**0.814**	0.397	0.847	0.365
pH (S.U.) Minimum	6.87	6.83	6.85	6.74	6.80	**6.54**	6.59	6.7	**6.72**	6.41	6.4	6.9
pH (S.U.) Maximum	7.05	7.19	7.15	7.19	7.46	**7.44**	7.02	7.06	**7.05**	7.13	7.18	7.27
DO (mg/L) Minimum	6.3	6.06	6.13	6.4	6.98	**6.80**	6.67	7.42	**7.54**	7.99	6.86	6.68
TRC (mg/L) Ave Mon	0.02	< 0.07	0.06	**0.23**	**0.20**	**0.26**	**0.20**	**0.20**	**0.21**	**0.220**	**< 0.170**	0.03
TRC (mg/L) Inst Max	0.22	0.43	0.35	0.58	0.46	0.45	0.34	0.31	0.59	0.55	0.430	0.19
CBOD5 (lbs/day) Average Monthly	7	13	20	10	14	**16**	33	12	**19**	< 7.0	< 7.0	9
CBOD5 (lbs/day) Weekly Average	10	25	26	16	20	**32**	42	16	**48**	< 8.0	8.0	10
CBOD5 (mg/L) Average Monthly	3	4	6	3	4	**3**	8	3	**4**	< 2.0	< 2.0	4
CBOD5 (mg/L) Weekly Average	3	7	7	4	6	**5**	10	5	**7**	< 2.0	3.0	4
BOD5 (lbs/day) Influent Ave Monthly	1229	1497	1540	1440	801	**1106**	1048	290	**967**	782.0	1212	847
BOD5 (lbs/day) Influent Weekly Ave	1580	1657	2298	1803	1258	**1792**	1394	352	**1168**	1135	1530	984
TSS (ppd) Ave Mon	13	12	22	38	16	**40**	62	13	**63**	< 10.0	< 8.0	8
TSS (lbs/day) Influent Ave Monthly	2053	1925	2556	2030	1476	**2016**	1465	305	**1063**	813.0	1644	1182
TSS (lbs/day) Influent Weekly Ave	2435	2371	4286	2857	2167	**3531**	2174	402	**1481**	1306.0	2366	1567
TSS (ppd) Wkly Ave	19	28	52	86	26	**83**	78	16	**204**	14.0	14.0	13
TSS (mg/L) Ave Mon	4	4	6	10	4	**8**	15	4	**11**	< 3.0	< 3.0	3
TSS (mg/L) Wkly Ave	6	8	14	22	8	**13**	17	5	**30**	5.0	4.0	5
Fecal Coliform (#/100 ml) Geometric Mean	3	6	3	7	15	**4**	13	6	**13**	< 1.0	< 1.0	6
Fecal Coliform (#/100 ml) Instant Maximum	5.2	13.2	25	135	165	**10**	148	141	**85.7**	2.0	2.0	103.9
Total Nitrogen (mg/L) Average Monthly	3.64	4.689	5.15	6.714	4.66	**4.53**	6.95	4.71	**4.45**	< 4.3	4.93	6.65
Ammonia (lbs/day) Average Monthly	0.5	0.9	5.8	7.6	0.9	**1.7**	2.0	4.9	**1.4**	0.8	2.1	3.0
Ammonia (mg/L) Average Monthly	0.17	0.26	1.65	1.96	0.22	**0.34**	0.45	1.35	**0.39**	0.26	0.74	1.23
Total Phosphorus (mg/L) Ave Monthly	5.37	4.68	2.59	3.1	2.78	**1.78**	1.52	2.06	**1.52**	2.3	1.92	3.5

Compliance History

Effluent Violations for Outfall 002, from: October 1, 2019 To: August 31, 2020

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	03/31/20	Avg Mo	0.26	mg/L	0.25	mg/L
TSS	12/31/19	Wkly Avg	204	lbs/day	156	lbs/day
TSS	12/31/19	Wkly Avg	30	mg/L	24	mg/L

Other Comments:

The TRC exceedance is less than 10% of the permit value and should not be significant.
The TSS exceedance may be significant as its cause and frequency are unknown. The plant operator reports the facility and the treatment plant manufacturer have worked together to solve the high TSS occurrence.

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** .583
Latitude 41º 27' 25.37" **Longitude** -79º 7' 10.84"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
DO	4-mg/L	Daily minimum		BPJ

Comments: HQ special protection watershed with advanced treatment requirements

Water Quality-Based Limitations

A “Reasonable Potential Analysis based on the Sewerage Program determined the following parameters were candidates for limitations: CBOD5, TSS, nitrogen, ammonia, phosphorus, DO and pH.

The following requirements were established to maintain the receiving waters high-quality-cold-water fishery stream classification. DOSAG modelling should not be necessary.

Parameter		Limit (mg/l)				SBC	Model		
Name	Period	Minimum	Average	Average	Maximum		Minimum	Average	Maximum
CBOD5	Summer		10	15	20			10	
	Winter		20	30	40				
TSS			16	24	32			16	
TRC			0.1		0.4			0.25	
Ammonia	Summer		2.0		4.0				
	Winter		6.0		12.0			2.0	
DO		6.0						6.0	
pH		6.0			9.0		6.0		9.0

Comments: HQ watershed where stream chlorine demand consideration has resulted in lower effluent TRC limitations.

Anti-Backsliding

Not appropriate.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 002, Effective Period: effective date through expiration date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.1	XXX	0.4	1/day	Grab
CBOD5 Nov 1 - Apr 30	96.0	144.0	XXX	20.0	30.0	40.0	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	48.0	72.0	XXX	10.0	15.0	20.0	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	XXX	XXX	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	XXX	XXX	XXX	1/week	24-Hr Composite
TSS	78.0	156.0	XXX	16.0	24.0	32.0	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	29.1	XXX	XXX	6.0	XXX	12.0	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	9.7	XXX	XXX	2.0	XXX	4.0	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001 after disinfection

Facility:
NPDES #:
Outfall No:
n (Samples/Month): 4
Reviewer/Permit Engineer: W Mentzer

Parameter Name	trc mean	trc max	trc mean										
Units	mg/L	mg/L	mg/L										
Detection Limit	0.07	0.07	0.07										
Sample Date	***When entering values below the detection limit, enter "ND" or use the < notation (eg. <0.02)***												
	0.02	0.22	0.02										
	<.07	0.43	0.07										
	6	0.35	0.06										
	,23	0.58	,23										
	0.2	0.46	0.2										
	0.26	0.45	0.26										
	0.2	0.34	0.2										
	0.2	0.31	0.2										
	0.21	0.59	0.21										
	0.22	0.55	0.22										
	< .17	0.43	0.17										
	0.03	0.19	0.03										
	,.17												

Discharger	Jenks Township	Tuesday, September 29, 2020
Site	Marienville STP	Revised Thursday, December 31, 2020
Municipality	JenksTownship	
County	Forest	
NPDES Permit	PA0101931	

TRC EVALUATION

Input appropriate values in B4:B8 and E4:E7

0.0230	= Q stream (cfs)	0.5	= CV Daily
0.0280	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.4	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	**= BAT/BPJ Value**	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	**1.3.2.iii**	WLA afc = 0.241	**1.3.2.iii**	WLA cfc = 0.229
PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373	**5.1c**	LTAMULT cfc = 0.581
PENTOXSD TRG	**5.1b**	LTA_afc= 0.090	**5.1d**	LTA_cfc = 0.133

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	LIMIT (mg/l) = 0.111	AFC
		X LIMIT (mg/l) = 0.362	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... ...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... ...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

(0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)).... ....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)

Chlorine Required = perennial 1 + Chlorine Demand perennial 2 + Chlorine Residual

Stream	Reach/Node	Conditions			
Stream	Flow			perennial	perennial
Stream	Code			49939	49939
	Function			Outfall	Outfall
Samples				30	30
reach	outfall		RMI	8.48	8.48
	Reach End		RMI	0	0
reach			feet	44774.4	44774.4
drainage			sq miles	0.23	0.23
TRC	limitation	average	mg/L	0.248	0.111
		maximum	mg/L	0.812	0.362
elevation		modelled	feet	1628.95	1628.95
elevation		modelled	feet	1238.19	1238.19
slope		modelled	foot/foot	0.009	0.009
low flow			cfs/sq mi	0.100	0.100
discharge			mgd	0.0280	0.0280
Runoff	Period		hours	24.000	24.000

With a 0.3-mg/L discharge chlorine demand the existing TRC requirements are verified.

stream	flow		cfs	0.02300	0.02300
stream	flow		MGD	0.014865	0.014865
stream	flow	total	MGD	0.042865	0.042865
stream	chlorine	demand	mg/L	0.4	0.4
discharge	discharge	demand	mg/L	0.3	
stream	Total Stream/Waste		ratio	1.5	1.5

A 0.1 monthly average and 0.4-mg/L maximum should be provided based on not using a discharge chlorine demand.

permitted	TRC	mean	WQ	0.25	0.25
permitted	TRC	maximum	WQ	0.82	0.82

The reported after dechlorination monthly maximum average is 0.3-mg/L with a 0.6-mg/L dail maximum.

Toxcon estimates a 0.5-mg/l average and 0.6-mg/L maximum TRC levels based on weekly analysis. With daily analysis the reported values are approached. Additional treatment is recommended.